Tree Impact Analysis Report
3303 Dominion Road
Fort Erie, Ontario

prepared for

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prepared by

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KUNTZ FORESTRY CONSULTING INC. Project P3866

Introduction

Kuntz Forestry Consulting Inc. (KFCI) was retained by 13804003 Canada Inc. to complete a Tree Impact Analysis Report as part of a development application for the subject property located at 3303 Dominion Road in the Town of Fort Erie, Ontario. The subject property is located on the south side of Dominion Road, north of Parker Avenue, and east of Burleigh Road North, within a residential area.

The work plan for this tree preservation study included the following:

- Prepare inventory of all neighbouring and shared tree resources adjacent to the subject property with the potential to be impacted by the proposed development;
- Evaluate potential tree saving opportunities based on proposed development plans;
- Document the findings in a Tree Impact Analysis Report.

The results of the evaluation are provided below.

Methodology

All neighbouring and shared tree resources adjacent to the subject property with the potential to be impacted by the proposed works were included in the tree inventory. Trees were located using a backpack GPS unit (Trimble R2 GNSS receiver) accurate to ± one metre and estimations made from known points in the field. Trees included in the inventory were identified as Trees 1378 – 1382 and A – W. Shared trees (i.e. those occurring along the property boundary between the subject property and a neighbouring property) were tagged with their identification number. Trees that existed clearly beyond the boundaries of the subject property (i.e. those located fully on neighbouring properties) were not tagged and were identified using the alphabetic sequence. Refer to Table 1 for the results of the tree inventory and Figure 1 for the locations of the trees included in the inventory. Refer to Appendix A for photographs of the trees.

Tree resources were visually assessed for condition utilizing the following parameters:

Tree # – Number assigned to trees that corresponds to Figure 1.
Species – Common and botanical names provided in the inventory table.
DBH – Diameter (cm) at breast height, measured at 1.4m above the ground.
Condition – Condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G).
Crown Dieback – Percentage of dead branches within the crown.
Dripline – Crown radius (m).
Comments – Any other relevant tree condition information.

The preservation potential of a tree was assessed based on its minimum tree protection zone (mTPZ) distance. This method is commonly accepted by many nearby municipalities. The minimum tree protection zone of a tree is based on the tree's diameter at breast height (DBH), as follows:

Diameter at Breast Height (cm)	Minimum Tree Protection Zone (m) (measured from edge of stem)
<10	1.2
10 – 29	1.8
30 – 40	2.4
41 – 50	3.0
51 – 60	3.6
61 – 70	4.2
71 – 80	4.8
81 – 90	5.4
91 – 100	6.0
101+	6cm of protection for each 1cm of diameter

Typically, where encroachment into the mTPZ of a tree is expected to be approximately 30% of the mTPZ area or more, the tree is identified for removal as it is unlikely that the tree will recover from the extent of injury. Where encroachment into the tree's mTPZ is expected but is to be less than 30% of the mTPZ area, special mitigation measures should be employed to minimize the extent of injury where possible.

Existing Site Conditions

The subject property is currently occupied by a two-storey dwelling, two sheds, and vacant land. Tree resources included in the inventory exist in the form of landscape trees and naturally occurring trees. Refer to Figure 1 for existing site conditions.

Individual Tree Resources

The tree inventory was conducted on 19 July 2023. The inventory documented 28 neighbouring or shared trees adjacent to the subject property with the potential to be impacted by the proposed development. Refer to Table 1 for the results of the tree inventory and Figure 1 for the locations of the trees included in the tree inventory. Refer to Appendix A for photographs of the trees.

Tree resources were comprised of Basswood (*Tilia americana*), Black Walnut (*Juglans nigra*), Cherry species (*Prunus sp.*), Green Ash (*Fraxinus pennsylvanica*), Japanese Flowering Lilac (*Syringa reticulata*), Norway Maple (*Acer platanoides*), Norway Spruce (*Picea abies*), Poplar species (*Populus sp.*), Red Maple (*Acer rubrum*), Siberian Elm (*Ulmus pumila*), Tulip-tree (*Liriodendron tulipifera*), White Spruce (*Picea glauca*), and Willow species (*Salix sp.*).

Proposed Development

The proposed development involves the demolition of all existing structures and the construction of two blocks of townhomes with driveways, covered terraces, porticos, and some units with covered side porches. An internal laneway is to connect to Dominion Road, traverse between the townhome blocks, and end at a surface parking area proximate to the south end of the subject property. Refer to Figure 1 for the proposed site plan.

Discussion

The following sections provide a discussion and analysis of tree impacts and tree preservation relative to the proposed development and existing conditions.

Development Impacts/Tree Removal

The removal of two trees, identified as Trees 1381 and 1382, will be required in order to fully remove the remnants of an existing chain link fence located along the property boundary. These trees are considered shared as they are located along the boundary between the subject property and the neighbouring property to the east (0 Dominion Road). As such, written permission from the neighbouring property owner is required prior to the removal of these trees.

Tree Preservation

The preservation or conditional preservation of the remaining 26 trees, including Trees 1378 – 1380 and A – W, will be possible with the use of appropriate tree protection measures, as indicated on Figure 1. Tree protection measures must be implemented prior to the commencement of the proposed works to ensure tree resources designated for retention are not impacted. Refer to Figure 1 for the location of required tree preservation fencing, general Tree Protection Plan Notes, and tree preservation fence details.

Where the minimum tree protection zone (mTPZ) of a tree cannot be fully respected, including for Trees 1380, M – O, Q, R, and T – V, special mitigation measures have been prescribed and are described below.

<u>Trees 1380, M – O, Q, R, and T – V</u>

Encroachment into the mTPZs of Trees 1380, M – O, Q, R, and T – V will be required to accommodate the proposed development. Encroachment into the mTPZ of Tree 1380 will be required to accommodate the overdig required for the construction of the proposed townhomes and the construction of a proposed covered terrace. Encroachment into the mTPZs of Trees M – O, Q, R, and T – V will be required to accommodate the construction of the proposed surface parking area proximate to the south property boundary. If the following mitigation measures are employed, long-term adverse effects are not anticipated for these trees.

1. Tree preservation fencing should be installed, as depicted on Figure 1, and maintained throughout the duration of the construction process.
2. Air-spade or low-pressure hydro-vacuum technology should be used to excavate trenches, in the locations indicated on Figure 1, under the supervision of a Certified Arborist.
    a. The depth of the portions of the trench adjacent to the proposed townhome will be a minimum of 90cm.
    b. The depth of the portions of the trench adjacent to the proposed covered terrace will depend on the depth of excavation required to install the covered terrace.
    c. The depth of the trenches adjacent to the proposed surface parking area will depend on the depth of excavation required to install the proposed curbs.
3. Any roots exposed within the trenches are to be pruned by a Certified Arborist in accordance with Good Arboricultural Standards.
4. The trenches are to be backfilled with clean topsoil.

5. Any branches that extend into the proposed development and require pruning should be pruned by a Certified Arborist or other tree professional in accordance with Good Arboricultural Standards.

It should be noted that the preservation of neighbouring or shared trees subject to injury is conditional upon the number / size of roots encountered within the trenches. In the event that large structural roots or extensive significant roots (i.e. roots measuring 5cm in diameter or larger) are encountered within a trench, alternative design / construction options should be considered whereby these roots can be preserved. Should no alternative design / construction options be feasible, the tree would require removal if the severance of the roots would render the tree unstable or unlikely to recover from the injury.

Tree 1380 is considered a shared tree as it is located along the property boundary between the subject property and the neighbouring property to the west (3331 Dominion Road). Trees M – O, Q, R, and T – V are located fully on the neighbouring property to the south (3310 Parker Avenue). The respective neighbouring property owners should be engaged to discuss the proposed injury and conditional preservation of these shared or neighbour-owned trees prior to the commencement of the proposed works.

It is highly recommended that the neighbouring and shared trees inventoried as part of this report are located by an OLS surveyor in order to confirm ownership and preservation potential. Once the trees have been located at a higher level of accuracy, this report should be reviewed to confirm the ownership and the preservation planning of the inventoried trees.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by 13804003 Canada Inc. to complete a Tree Impact Analysis Report as part of a development application for the subject property located at 3303 Dominion Road in the Town of Fort Erie, Ontario. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 28 neighbouring or shared trees adjacent to the subject property with the potential to be impacted by the proposed development. The removal of two trees will be required to accommodate the proposed development. The remaining trees can be preserved or conditionally preserved with the use of appropriate tree protection measures, as outlined in Figure 1.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for tree preservation fencing locations, general Tree Protection Plan Notes, and tree preservation fence details.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.

- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.

- Special mitigation measures have been prescribed for select trees, as outlined in the *Tree Preservation* section of this report.

- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.

- Site visits pre, during, and post construction are recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

Respectfully Submitted,

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Limitations of Assessment

Only the tree(s) identified in this report were included in the inventory. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These may include a visual examination taken from the ground of all the above-ground parts of the tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of attack by insects, discoloured foliage, the condition of any visible root structures, the degree of lean (if any), the general condition of the trees and the identification of potentially hazardous trees or recommendations for removal (if applicable). Where trees could not be directly accessed (i.e. due to obstructions, and/or on neighbouring properties), trees were assessed as accurately as possible from nearby vantage points.

Locations of trees provided in the report are determined as accurately as possible based on the best information available. If official survey information is not provided, tree locations in the report may not be exact. Where KFCI's in-house GPS unit is used (if applicable), tree locations are accurate only to the extent that the technology allows, which can be variable based on satellite available, RTK network / cell coverage, canopy coverage, and/or projection transformation limitations. In this case, if trees occur on or near property boundaries, an official site survey may be required to determine ownership utilizing specialized survey protocol to gain precise location.

Furthermore, recommendations made in this report are based on the development plans that have been provided at the time of reporting. These recommendations may no longer be applicable should changes be made to the development plan and/or grading, servicing, or landscaping plans following report submission.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigor constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions. Any tree will fail if the forces applied to the tree exceed the strength of the tree or its parts.

Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be re-assessed periodically. The assessment presented in this report is valid at the time of inspection.

Table 1. Tree Inventory

Location: 3303 Dominion Road, Fort Erie Date: 19 July 2023 Surveyor: KNH

Tree #	Common Name	Scientific Name	DBH	Multi-stem DBH	TI	CS	CV	CDB	DL	mTPZ	Comments	Owner	Action
1378	Siberian Elm	*Ulmus pumila*	26.5	-	G	F	F	20	4.0	1.8	Broken branches (L), epicormic branching (L)	Shared (Subject Property / Neighbour)	Preserve
1379	Siberian Elm	*Ulmus pumila*	10	-	PF	G	FG		3.0	1.8	Lean (L), included (H) fence	Shared (Subject Property / Neighbour)	Preserve
1380	Poplar species	*Populus sp.*	~90, 60	~108	F	G	F		7.0	6.5	V-unions at 1.4m and 2m with included bark	Shared (Subject Property / Neighbour)	Preserve - Conditional (Injure)
1381	Norway Maple	*Acer platanoides*	15, 15, 14, 12	28	PF	F	F		5.0	1.8	V-unions at 0.1m and 0.5m with included bark, included (H) fence, lean (L)	Shared (Subject Property / Neighbour)	Remove
1382	Norway Maple	*Acer platanoides*	14, 12, 12, 10	24	PF	F	F		5.0	1.8	V-unions at base, 0.1m, and 0.5m with included bark, lean (L), included (H) fence	Shared (Subject Property / Neighbour)	Remove
A	Japanese Flowering Lilac	*Syringa reticulata*	~8	-	FG	G	G		1.5	1.2	Stem wounds (L)	Neighbour	Preserve
B	Green Ash	*Fraxinus pennsylvanica*	~8	-	G	G	G		1.5	1.2		Neighbour	Preserve
C	Siberian Elm	*Ulmus pumila*	16	-	G	G	F		2.5	1.8		Neighbour	Preserve
D	Siberian Elm	*Ulmus pumila*	22.5, 13	26	FG	F	F	20	3.0	1.8	Union at 0.5m, epicormic branching (M)	Neighbour	Preserve
E	Siberian Elm	*Ulmus pumila*	32.5	-	G	F	F	20	6.0	2.4		Neighbour	Preserve
F	Siberian Elm	*Ulmus pumila*	19.5	-	F	PF	PF	30	5.0	1.8	Bow (M)	Neighbour	Preserve
G	Green Ash	*Fraxinus pennsylvanica*	~12, 10, 8	~17.5	F	G	F		2.5	1.8	Union at base, evidence of Emerald Ash Borer (M)	Neighbour	Preserve
H	Green Ash	*Fraxinus pennsylvanica*	~12, 6	~15.5	F	FG	FG		2.5	1.8	V-union at base with included bark	Neighbour	Preserve
I	Siberian Elm	*Ulmus pumila*	~12	-	G	G	G		2.0	1.8		Neighbour	Preserve
J	Green Ash	*Fraxinus pennsylvanica*	~12	-	FG	G	F		2.0	1.8	Evidence of Emerald Ash Borer (L)	Neighbour	Preserve
K	Willow species	*Salix sp.*	~160	-	P	P	P		4.0	9.6	Decay (H) in trunk, main leader lost, very large cavity at breaking point, only epicormic branching / coppice growth remains	Neighbour	Preserve
L	Red Maple	*Acer rubrum*	~26, 22, 16, 16	~41	F	FG	G		6.0	3.0	V-unions at base and 0.2m with included bark	Neighbour	Preserve
M	Norway Maple	*Acer platanoides*	~110	-	PF	F	PF	20	10.0	6.6	Decay (M) in trunk, poor branch unions, broken branches (M)	Neighbour	Preserve - Conditional (Injure)
N	White Spruce	*Picea glauca*	~42	-	G	G	FG		4.0	3.0		Neighbour	Preserve - Conditional (Injure)

O	Tulip-tree	*Liriodendron tulipifera*	~96	-	G	F	F	20	10.0	6.0	Broken branches (M)	Neighbour	Preserve - Conditional (Injure)
P	Norway Maple	*Acer platanoides*	~16, 14	~21.5	FG	FG	FG		6.0	1.8	Union at base, one leader leaning (L)	Neighbour	Preserve
Q	Norway Spruce	*Picea abies*	~66	-	G	G	FG		7.0	4.2		Neighbour	Preserve - Conditional (Injure)
R	Norway Spruce	*Picea abies*	~44	-	G	G	G		5.0	3.0		Neighbour	Preserve - Conditional (Injure)
S	Basswood	*Tilia americana*	~16, 14, 10	~23.5	F	FG	FG		4.0	1.8	V-union at 0.1m with included bark	Neighbour	Preserve
T	Norway Spruce	*Picea abies*	~48	-	G	FG	F	10	6.0	3.0		Neighbour	Preserve - Conditional (Injure)
U	Norway Maple	*Acer platanoides*	~32, 28	~42.5	F	FG	F	10	5.0	3.0	Lean (L), v-union at 1m with included bark	Neighbour	Preserve - Conditional (Injure)
V	Black Walnut	*Juglans nigra*	~26	-	G	FG	FG		5.0	1.8	Vine competition (L)	Neighbour	Preserve - Conditional (Injure)
W	Cherry species	*Prunus sp.*	17	-	G	G	G		3.0	1.8		Neighbour	Preserve

Codes		
DBH	Diameter at Breast Height	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigor	(G, F, P)
CDB	Crown Dieback	(%)
DL	Dripline (radius)	(m)
mTPZ	Minimum Tree Protection Zone (as measured from edge of tree)	(m)
Owner	Ownership of Tree	Shared (Subject Property / Neighbour), Neighbour
D = dead, P = poor, F = fair, G = good, ~ = estimate, (L) = light, (M) = moderate, (H) = heavy		

Appendix A: Tree Photographs


Image 1. Trees A (right) and B (left)


Image 2. Tree 1378


Image 3. Trees C (right) and D (left)


Image 4. Trees E (right) and F (left)


Image 5. Tree G


Image 6. Tree 1379


Image 7. Tree I


Image 8. Tree 1380


Image 9. Tree J


Image 10. Tree K


Image 11. Tree L


Image 12. Tree M


Image 13. Trees N (right) and O (left)


Image 14. Tree P


Image 15. From right to left, Trees Q – T


Image 16. Tree U


Image 17. Tree V


Image 18. Tree W

Image 19. Trees 1381 (right) and 1382 (left)